

REMARKS

Claims 7-15 are pending in this application, of which claims 7-12 have been amended, and claims 13-15 have been added.

Claims 7-12 stand objected to for various informalities which have been corrected in the aforementioned amendments.

Claims 7-9 stand rejected under 35 USC §102(b) as anticipated by U.S. Patent 5,097,166 to Mikulic (hereinafter "**Mikulic**").

Applicants respectfully traverse this rejection.

The Examiner asserts that magnetic field line $\phi 5$ in Fig. 2 of **Mikulic** shows the claimed "magnetic field ... that does not pass through the rotating shaft." Applicants respectfully disagree with the Examiner on this point, because magnetic field line $\phi 5$ is only one part of the entire magnetic field. With any magnetic field, and any region of space, there is always *some* magnetic field line that does not enter the region of space (unless the region is large and completely surrounds the magnet generating the magnetic field, which is not true of the space region defined by **Mikulic**'s shaft).

Applicants respectfully submit that the Examiner is mis-reading "a magnetic field" to mean "*some portion* of a magnetic field". The majority of **Mikulic**'s magnetic field passes through the rotor, because there are north poles on the left side and south poles on the right side.

Mikulic states that the flux barrier slots 45-48 are intended to reduce the magnetic field lines $\phi 2$ and $\phi 3$ shown in Fig. 1b (col. 5, lines 21-43); that is, the purpose is to enlarge those

loops and push the magnetic field lines in the direction of the rotor, and therefore increase the flux through the rotor. The flux barrier slots 50-53 appear to have the same function as the flux barriers 45-48, and are discussed by Mikulic at col. 5, line 63 to col. 6, line 2. Mikulic states that they are for “very high speed motors” and that the bridges 59 and 60 are so narrow that they cause magnetic saturation, which would push even more magnetic field lines toward the rotor.

Thus, it is respectfully submitted that Mikulic’s voids increase the amount of flux through the rotor, contrary to the recitation in claims 7-9 that there is no flux through the rotor.

Thus, the 35 USC §103(b) rejection should be withdrawn.

Claims 10-12 stand rejected under 35 USC §102(b) as anticipated by U.S. Patent 4,568,846 to Kapadia (hereinafter “Kapadia”).

The Examiner asserts that Fig. 2 of Kapadia anticipates, but presents two different interpretations.

In the text on page 3 the Examiner states that Fig. 2 shows the claimed secondary permanent magnets but does not identify which features of Fig. 2 these are supposed to be. The Examiner also states that feature 42 anticipates the primary magnets. However, this is an error because Kapadia says that the feature 42 is a bolt (col. 5, line 41). There is a corresponding bolt hole 35 in the lamina (Fig. 3 and col. 4, line 25).

On page 4, the Examiner provides a second interpretation of the reference, in the labeled version of Kapadia’s Fig. 2. Two of the four magnets 41, namely the horizontal magnets, are

asserted to be “secondary” magnets, even though they are exactly like the other two, which therefore must be the primary magnets.

The magnets of Fig. 2 form a quadrupole, with north poles at upper left and lower right and south poles at upper right and lower left. In the Examiner’s labeled version of Kapadia’s Fig. 2, it is a vertical line that is labeled as a line that connects two poles, but we disagree and think that two lines at 45° to the vertical line are really the lines connecting two poles. Because of this, we think that the two horizontal “secondary” magnets are not truly symmetrical about a line that connects two magnetic poles, as claimed.

Accordingly, claims 7-9 have been amended to recite that the void is “located between” the permanent magnet and the rotor shaft (or similar language). In addition, new dependent claims have been added that the void is shaped like an arc of a circle. Claims 10-12 have also been amended to recite that the primary magnets do *not* have lengths radially disposed.

Thus, the 35 USC §102(b) rejection should be withdrawn.

In view of the aforementioned amendments and accompanying remarks, claims 7-15, as amended, are in condition for further examination.

U.S. Patent Application Serial No. 10/692,865
Response to Office Action dated September 17, 2004

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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